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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/898,743	07/03/2001	Krassen Dimitrov	P-IS 4548	3666
41552	7590	01/10/2006	EXAMINER	
MCDERMOTT, WILL & EMERY 4370 LA JOLLA VILLAGE DRIVE, SUITE 700 SAN DIEGO, CA 92122			CHUNDURU, SURYAPRABHA	
			ART UNIT	PAPER NUMBER
			1637	
DATE MAILED: 01/10/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/898,743	<b>Applicant(s)</b> DIMITROV, KRASSEN	
	<b>Examiner</b> Suryaprabha Chunduru	<b>Art Unit</b> 1637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10/28/05.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 90-177 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 90-177 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>9/26/05</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 28, 2005 has been entered.

***Status of the Application***

2. The action is in response to the RCE filed on October 28, 2005. Claims 1-89 are cancelled. New claims 90-177 are added and are currently pending in this application. All arguments and amendment have been fully considered and thoroughly reviewed and deemed persuasive in view of the amendment.

***Information Disclosure Statement***

3. The Information Disclosure Statement filed on September 26, 2005 has been considered.

***Priority***

4. This application is filed on July 03, 2001.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 90-177 are rejected under 35 U.S.C. 102(e) as being anticipated by Mirkin et al. (USPN. 6,361,944) in view of Chandler (WO 99/52708).

Mirkin et al. teach claim 90-177, a diverse population of nanoparticles comprising aggregate probe molecule comprising plurality of genedigits, each genedigit being a predetermined sequence (oligonucleotides) wherein gene digit is attached to an anti-gene digit (complementary sequences or oligonucleotide probe sequences) (see col. 26, line 56-67, col. 27, line 1-21, col. 18, line 6-17, indicates one type of nanoparticles having oligonucleotide portions (genedigit) complementary to another type of nonoparticles having oligonulceotide sequences (anti-genedigit)).

With regard to claim 90, Mirkin teaches that said population is in solution (see col. 27, line 48-57);

With regard to claim 95-120, 158, 166-167, Mirkin et al. teach that each molecule is DNA comprising target specific nucleic acid sequence (see col. 18, line 6-40);

With regard to claims 92, 96, 99, 106, 113-120, 123, Mirkin et al. teach that the molecule is attached to a target molecule noncovalently via hybridization (see col. 27, 48-57);

With regard to claim 92, 99, Mirkin et al. teach that said population comprises bridging nucleic acid (linking oligonucleotides) (see col. Fig.5, col. 13, line 44-48);

With regard to claim 124-127, Mirkin et al. teach that the diverse population comprises genedigits with two or more different sequences (see col. 27, line 5-21)

With regard to claim 90-129, 136-137, 153-155, 150-160, Mirkin et al. teach that said population of molecules comprise labels monomers fluorescent labels (see col. 29, line 3-60);

With regard to claim 130, Mirkin et al. teach that said unique labels comprise mixture of two or more different labels (nanoparticles) (see col. 26, line 35-67, col. 22, lines 40-45, col. 29, line 3-60);

With regard to claim 132, 151, 161, Mirkin et al. teach said labels comprise quantum dot (see col. 61, line 29-67, col. 62, line 1-12, col. 64, line 45-67)

With regard to claim 78, Mirkin et al. teach a kit comprising a target specific probe bound to at least two genedigits (oligomers) and at least two anti-genedigits (see col. 38, lines 4-23).

With regard to claim 133-135, 162-164, Mirkin et al. teach that diverse population further comprises a specifier, a dendrimer of a fork-like or comb-like (see Fig. 13A-B, 17A-C, col. 28, line 55-67);

With regard to claims 81, 85, 88-89, Mirkin et al. teach that the diverse population of labels comprise label monomers (oligonucleotides) and the label monomers are combined at different ratios (see col. 26, line 35-43);

With regard to claims 135-141, 156, Mirkin et al. teach that said target is attached to a chip or microarray (solid surfaces) (see col. 20, line 42-58);

With regard to claim 157-168, Mirkin et al. teach a kit comprising a set of genedigits (oligomers) and a unique set of labels bound to a nucleic acid (see col. 9, line 16-67, col. 10, line 1-67, col. 38, lines 14-23).

Although Mirkin et al. teach mixture of at least two or more label monomers, Mirkin did not specifically teach a diverse population of labels comprising thirty or more.

Chandler teaches microparticles with multiple fluorescent signals wherein Chandler et al. disclose (i) a unique or distinct population of labels comprising one or more unique labels bound to DNA (microparticles) (see page 5, lines 28-34, page 6, lines 23-33, see page 8, lines 19-22); (ii) unique labels or dyes comprise unique emission spectra (see page 6, lines 2-4) which is

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unique to the specific set or population (see page 23, lines 17-25); (iii) unique labels comprise mixture of two or more (64 - 40,960) different or distinctly labeled particles created through variation of the amount of or type of dye (see page 17, lines 28-37, page 18, lines 1-15, page 6, lines 23-33); (iv) labels comprise fluorescent dyes (see page 15, lines 28-32).

It would have been prima facie obvious to a person of ordinary skill in the art at the time the invention was made, to combine the diverse population of molecules comprising genedigits and anti genedigits as taught by Mirkin et al. with an inclusion of unique labels as taught by Chandler et al. to develop a sensitive and improved population of molecules with distinct labels. An ordinary artisan would have had a reasonable expectation of success that such modification of the method taught by Mirkin et al. in a manner as taught by Chandler et al. because Chandler et al. explicitly taught that unique labels or dyes comprise unique emission spectra (see page 6, lines 2-4) which is unique to the specific set or population (see page 23, lines 17-25); (iii) unique labels comprise mixture of two or more (64 - 40,960) different or distinctly labeled particles created through variation of the amount of or type of dye (see page 17, lines 28-37, page 18, lines 1-15, page 6, lines 23-33) and such modification of the method is considered obvious over the cited prior art in the absence of secondary considerations.

***Response to arguments:***

6. With regard to the rejections under 35 USC 102(e) as being anticipated by Mirkin et al., Applicants' arguments are fully considered and found not persuasive. Applicants argue that Mirkin et al. did not teach thirty or more unique labels as recited in the amended claims. Applicants' arguments and amendment are fully considered and found not persuasive because Mirkin teaches 2 or more labels and the term more could include any number above two and

anticipates 30 or more labels. The rejection is withdrawn herein in view of the amendment canceling the rejected claims. However the reference is used in new grounds of rejections to address the new claims and to address 30 or more labels.

5. With regard to the rejection under 35 USC 102(e) as being anticipated by Krantz et al. , Applicants' arguments and the amendment are fully considered and the rejection is withdrawn in view of the amendment canceling the rejected claims.

### ***Conclusion***

No claims are allowable.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Suryaprabha Chunduru whose telephone number is 571-272-0783. The examiner can normally be reached on 8.30A.M. - 4.30P.M , Mon - Friday,.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion can be reached on 571-272-0782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Suryaprabha Chunduru  
Patent Examiner  
Art Unit 1637  
1/9/06